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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,532

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David Williams

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EXAMINER

LEE, JAE W

ART UNIT

PAPER NUMBER

1656

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,532	<b>Applicant(s)</b> WILLIAMS ET AL.	
	<b>Examiner</b> JAE W. LEE	<b>Art Unit</b> 1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-36 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Application status***

Claims 1-36 are pending in the instant application.

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-20, drawn to a crystal comprising a catalytic domain of Syk protein or homologue thereof and a crystallizable composition comprising a catalytic domain of Syk protein or homologue thereof.

Group II, claim(s) 21-24, drawn to a computer comprising: (a) a machine-readable data storage medium, comprising a data storage material encoded with machine-readable data, wherein said data defines the binding pocket or domain as recited in (i)-(vi); (b) a working memory for storing instructions for processing said machine-readable data; (c) a central processing unit coupled to said working memory and to said machine-readable data storage medium for processing said machine-readable data and a means for generating three-dimensional structural information of said binding pocket or domain; and (d) output hardware coupled to said central processing unit for outputting three-dimensional structural information of said binding pocket or domain, or information produced using said three-dimensional structural information of said binding pocket or domain.

Group III, claim(s) 25-31, drawn to a method of using a computer for selecting an orientation of a chemical entity that interacts favorably with a binding pocket or domain as recited in (i)-(vi); said method comprising the steps of: (a) providing the structure coordinates of said binding pocket or domain on a computer comprising the means for

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generating three-dimensional structural information from said structure coordinates; (b) employing computational means to dock a first chemical entity in the binding pocket or domain; (c) quantitating the interaction energy between said chemical entity and all or part of the binding pocket or domain for different orientations of the chemical entity; and (d) selecting the orientation of the chemical entity with the most favorable interaction energy.

Group IV, claim(s) 32 and 33, drawn to a method for identifying a candidate inhibitor of a molecule or molecular complex comprising a binding pocket or domain as recited in (i)-(vi); comprising the steps of: (a) using a three-dimensional structure of the binding pocket or domain to design, select or optimize a plurality of chemical entities; (b) contacting each chemical entity with the molecule or the molecular complex; (c) monitoring the inhibition to the catalytic activity of the molecule or molecular complex by each chemical entity; and (d) selecting a chemical entity based on the inhibitory effect of the chemical entity on the catalytic activity of the molecule or molecular complex.

Group V, claim(s) 34-36, drawn to a method of utilizing molecular replacement to obtain a structural model of a molecule or a molecular complex of unknown structure, comprising the steps of: (a) crystallizing said molecule or molecular complex; (b) generating an X-ray diffraction pattern from said crystallized molecule or molecular complex; (c) applying at least a portion of the structure coordinates set forth in Figures i, 2 or a homology model thereof to the X-ray diffraction pattern to generate a three-dimensional electron density map of at least a portion of the molecule or molecular complex whose structure is unknown; and (d) generating a structural model of the molecule or molecular complex from the three-dimensional electron density map.

### ***Election of Species***

This application contains claims directed to the following patentably distinct species: staurosporine, adenosine, ATP, an ATP analogue, a nucleotide triphosphate, a nucleotide diphosphate, phosphate, active site inhibitor, AMP-PNP, NAc-Glu-Glu-Asp-Asp-Tyr-Glu-Ser-Pro-NH<sub>2</sub> (SEQ ID NO: 2), Glu-Glu-Asp-Asp-Tyr-Glu-Ser-Pro (SEQ ID NO: 5), a peptide comprising the amino acid sequence Glu-Asp-Asp-Tyr (residues 2-5 of SEQ ID NO:5), a peptide comprising the amino acid sequence Asp-Asp-Tyr-Glu (residues 3-6 of SEQ ID NO:5), a peptide comprising the amino acid

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sequence Asp-Tyr-Glu-Ser (residues 4-7 of SEQ ID NO:5), a peptide comprising the amino acid sequence Tyr-Glu-Ser-Pro (residues 5-8 of SEQ ID NO:5), a peptide comprising the amino acid sequence Glu-Glu-Asp-Asp-Tyr (residues 1-5 of SEQ ID NO:5), a peptide comprising the amino acid sequence Glu-Asp-Asp-Tyr-Glu (residues 2-6 of SEQ ID NO:5), a peptide comprising the amino acid sequence Asp- Asp-Tyr-Glu-Ser (residues 3-7 of SEQ ID NO:5), a peptide comprising the amino acid sequence Asp-Tyr-Glu-Ser-Pro (residues 4-8 of SEQ ID NO:5), a peptide comprising amino acids Asp-Glu-Glu-Asp-Tyr (SEQ ID NO:6), a peptide comprising amino acids Asp-Glu-Glu-Tyr-Asp (SEQ ID NO:7), a peptide comprising amino acids Asp-Glu-Tyr-Glu-Asp (SEQ ID NO:8), a peptide comprising amino acids Asp-Tyr-Glu- Glu-Val (SEQ ID NO:9), and a peptide comprising amino acids Tyr-Ser-Ile-Ile-Nle (SEQ ID NO:10).

The species are independent or distinct because they represent structurally different chemical entities. These claims will be examined to the extent they read upon the elected species. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-20 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Where a group of inventions is claimed in an application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art. Al-Obeidi et al. (Protein Tyrosine Kinases: Structure, Substrate Specificity, and Drug Discovery, Biopolymers (Peptide Science), Vol. 47, 197–223 (1998)) teach that Syk belongs to a family of protein tyrosine kinases (see Figure 1) which has highly conserved catalytic kinase domain. Al-Obeidi et al. also teach that there are numerous crystallized PTKs, i.e., PKA, FGFR1K, Src, Hck, etc, for which structure studies have been carried out (see pg. 200-204 under Crystal Structures of Protein Kinases (PKs)), which anticipates the limitation of claim 1, in the recitation of "A crystal comprising a catalytic domain of Syk protein or homologue thereof," and thus, the shared technical

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feature of the groups is not a “special technical feature”, unity of invention between the groups does not exist. It is also noted that a co-crystal complex, comprising a syk protein and one of chemical entities as recited in claims 4, 7, 14 and 17, represents a structurally different co-crystal complex depending on which chemical entity is used. Therefore, each co-crystal complex comprising one specific chemical entity is regarded as a “special technical feature,” and thus, the shared technical feature does not exist between co-crystal complexes having different chemical entities.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae W. Lee whose telephone number is 571-272-9949. The examiner can normally be reached on 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAE W LEE/  
Examiner, Art Unit 1656

/SUZANNE M. NOAKES/  
Primary Examiner, Art Unit 1656